Penn State University SWD Research

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2017 Monitoring Results - Raspberries

	First Catch	Peak numbers	Last Collection
Rock Springs	6/21	8/15-8/30	11/7
Erie County	5/12	8/29-9/1	9/26

2017 Monitoring Results – Various Crops, Erie County

Traps (ACV) were monitored every 2 to 5 days in 17 locations. First catches for the season were female in 12 instances, male in 4, and both male and female in one instance. First catches of males and females have been as early or earlier with each passing year, advancing from July 12 in 2013 to May 11 in 2017. As has been found in past years, SWD were found consistently though in relatively low numbers in the interior of a sweet corn field in mid to late summer (1 to 12 SWD found on 12 of 20 collection dates from July 21 to Sept 26 in 2017). This indicates that SWD is present in the summer and fall even in locations that don't have fruit, but that may provide shelter and/or sustenance.

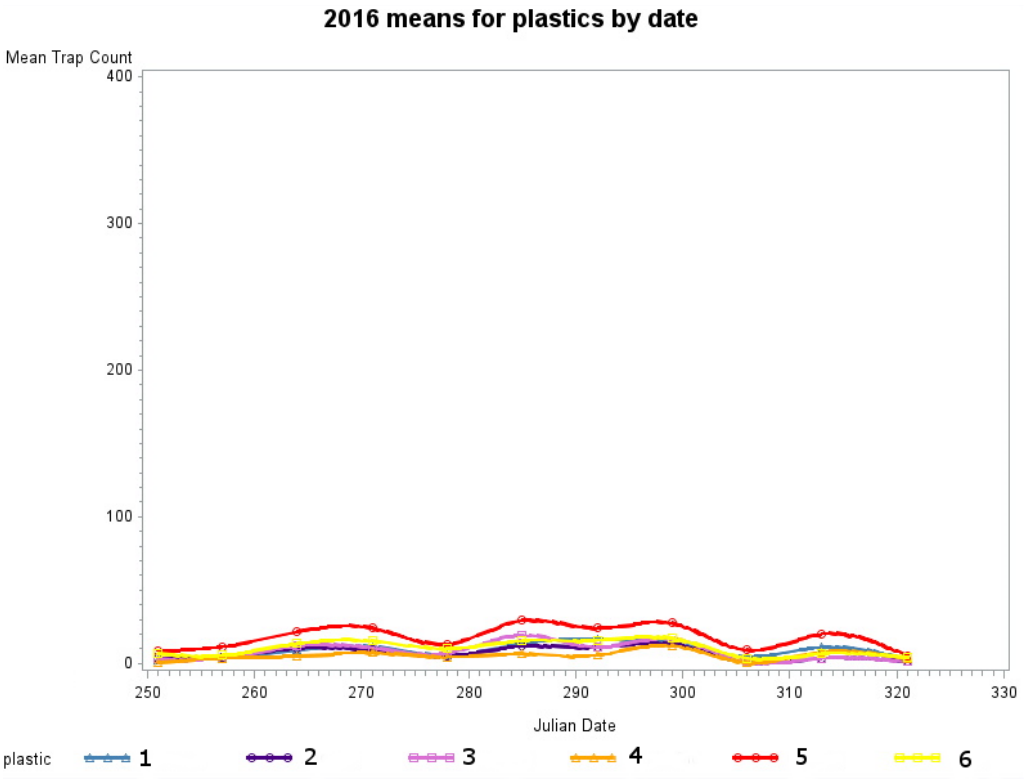
Monitoring as part of the Tunnel Berries project at the Horticulture Research Farm at Rock Springs. This project is a multi-institution effort to provide information for growers on a number of aspects related to high-tunnel berry production. The work with SWD involves looking at how high tunnel films with different properties (standard clear, diffusing, UV-blocking, IR-blocking) might affect insect pest populations in the tunnel. Our experiment has 6 treatments (5 plastics and 1 without plastic), 2 raspberry cultivars, and 3 replications. SWD is one of the insects being examined. In 2016, the year of planting for the experiment, we monitored SWD with vinegar traps in the high tunnels. In 2017 we monitored SWD weekly with incubations of fruit in addition to vinegar traps. Data from 2017 are still being analyzed. So far, the trap data from 2017 look inconsistent with results from 2016 and need further analysis before any conclusions can be reached.

In 2018 we anticipate combining plastic (if a significant effect is found) with other control measures, namely attracticidal spheres (developed by Tracy Leskey at USDA-ARS) and shortened harvest intervals. In 2016 we were awarded a NE SARE grant to cover the 2018 summer and fall research.

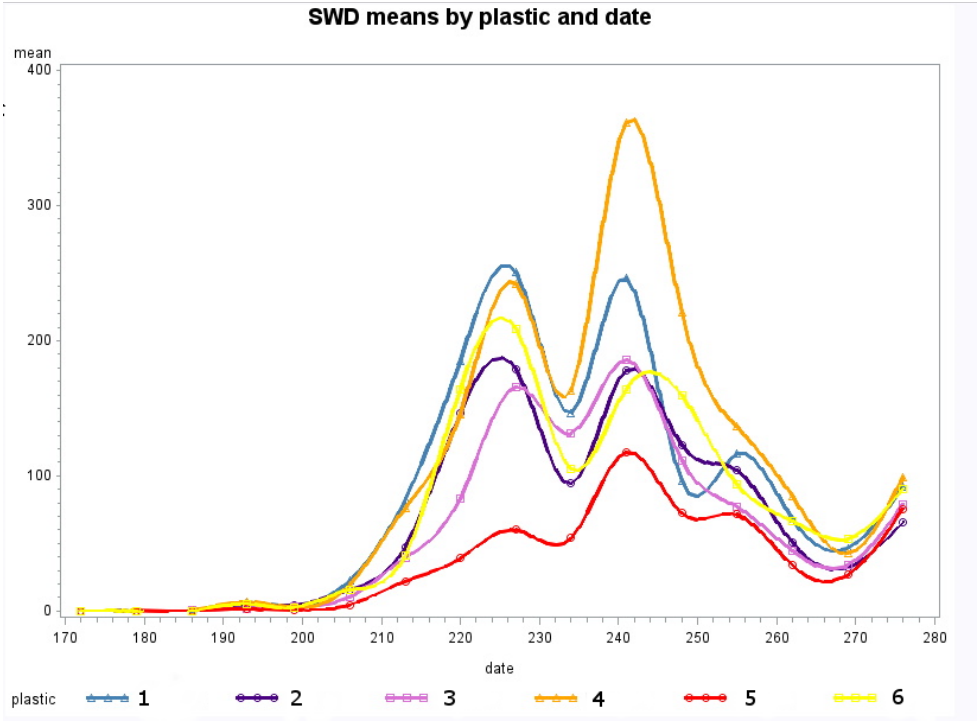
Key Observations:

Our mean SWD counts were vastly higher in 2017 than in 2016. We also have many more SWD much earlier in the season in 2017. This probably was simply due to the fact that plants were already established, so harvest began much earlier in 2017 (May 26) as compared to 2016 (August 8). (Graphs below). The order of plastic treatment effects changed between 2016 and 2017, most notably that the 'no plastic' treatment (red) had the highest counts in 2016 and the lowest counts in 2017.

Questions based off of these data include what role weather played in SWD populations. We have data awaiting analysis, but overall 2017 was cooler and had more days with rain than 2016, probably favoring SWD. Besides fruit being present earlier, foliage was much more dense, and yields were much higher.


2016 means for plastics by date
Mean Trap Count
400
300
200
100
0
250
260
270
280
290
300
310
320
330
Julian Date
plastic
1
2
3
4
5
6

2017:


SWD means by plastic and date
mean
400
300
200
100
0
170
180
190
200
210
220
230
240
250
260
270
280
date
plastic
1
2
3
4
5
6

2016 Lure Comparison

In a small comparison (2 of each) along a wooded edge with wild black raspberries and blackberries, Scentry and Trécé lures were compared to ACV traps. The first SWD were caught 3 weeks earlier with the Scentry lure and were female, whereas both male and female were caught the following week in traps with either Scentry or Trécé lures. The Trécé lure was available in only one formulation at the time.